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ABSTRACT

It is noted, firstly, that instructional technology has had difficulty in finding its place in higher education, and secondly, that higher education is currently undergoing a transformation as it adapts to new social needs. This transformation is described as revealing itself in a resurgence of curriculum reform with emphasis on general education and in the growth of the adult student population. It is concluded that the transformation offers new opportunities for instructional technology, but also underscores the need to create a new community of interest that combines technologists, curriculum reformers, and adult learning theorists. (2 references) (GL)

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INTERACTIVE TECHNOLOGIES AND THE TRANSFORMATION OF THE CURRICULUM

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ABSTRACT

Instructional technology has had difficulty in finding its place in higher education. Today, however, higher education is undergoing a transformation as it adapts to new social needs. This transformation, which reveals itself in a resurgence of curriculum reform and in the growth of the adult student population, offers new opportunities for instructional technology, but also the need to create a new community of interest that combines technologists, curriculum reformers, and adult learning theorists.

It is something of a truism in instructional technology circles that, while interactive videodisc and related technologies have found a more or less ready home in training, they have remained on the periphery of higher education. Designers look at the potential that the newer technologies hold for instruction--the ability for simulation and gaming, applications for giving users experience in problem solving and decision-making, etc.--and wonder why colleges and universities have not responded in kind.

There are more than enough reasons to explain the glacial rate of acceptance. Higher education is a wonderful example of the old saying, "As the twig is bent, so grows the branch." Many of the fundamental assumptions that colleges and universities bring to the educational process are, in fact, responses to the technology of the time when the institutions were formed. In medieval Europe, classroom-oriented, group-paced, authority-centered, knowledge-based education was the only practical response to the physical realities of the times. These adaptations to technology are now traditions that, with our usual lack of historical perspective, we educators tend to accept as universal absolutes.

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These factors constitute fundamental elements of the paradigm in which higher education is conducted. They contribute, for instance, to the notion of academic time as a criterion for determining the quality of a course, to acceptance of norm-based testing rather than mastery as the means of evaluating student performance, and to the persistence of memorization as a skill which is tested in almost every course.

These factors have tended to slow down the acceptance of technology in higher education and to shape the uses of technology that are accepted. For example, while video has, after thirty years or more of experimentation, found an ongoing role in higher education, it has been used primarily to extend the reach of the traditional classroom model rather than to enhance the fundamental processes of education. The problem with the newer, interactive technologies is that they are not necessarily effective at extending traditional teaching. Instead, they offer new means of articulating basic instructional goals. The few interactive programs that have been successful in the otherwise traditional university curriculum have, like television, served to extend the reach of the curriculum rather than redirect it. A good example is the chemistry videodisc laboratory package developed at the University of Illinois; the ultimate rationale for the program was that it allowed more students to have access to a laboratory experience. The extension role remains the primary role of instructional technology. As long as the basic assumptions and organizing principals that underlie the current paradigm of higher education remain unchanged, it is unlikely that interactive media will have the kind of impact on the college curriculum that its advocates envision.

It is just this issue, however, where the greatest potential for success lies, for there is every good reason to believe that higher education today is undergoing a transformation best described as a paradigm shift. The basic assumptions on which our institutions have been built are changing in significant, long-term ways. The scope of the transformation can been seen in two of the most evident changes. First, the rapid influx of computer technology in society have democratized (and, in the process, devalued) information. The information explosion has shifted a basic power base in society; in this new social landscape, acquisition of information (the traditional function of education) is no longer as important. There is simply too much information that becomes obsolete too soon for more possession of knowledge to be an end in itself. Instead, power rests, increasingly, with the ability to apply information--to analyze, to forecast, and to solve problems.

There are strong indications that these changes are not limited to the fringes of higher education, but represent the frontline of a shift in the higher education paradigm. The scope and direction of that shift can been seen in the national debate that has surrounded the current resurgence of interest in the general education curriculum. Reformation of general education has been the subject of several national commissions in the 1980's. One, sponsored by the National Institute of Education in 1984, recommends changes that suggest important implications for interactive technology. The report encourages greater student involvement in the learning process, calling for students to become "inquirers--creators, as well as receivers, of knowledge" and recommends increased use of research, simulations, projects, and similar methods to achieve those objectives (Mortimer, et al, 1984, p. 41). It also calls for the curriculum to deal

not only with subject matter, but with "the development of capacities of analysis, problem solving, communication, and synthesis" (p. 43). To that end, it also suggests that colleges and universities review not only the content of the curriculum, but also delivery and organizational issues.

This concern with both process and content was central to another national report on general education, sponsored by the American Colleges Committee in 1985. This report stated, "We do not believe that the road to a coherent undergraduate education can be constructed from a set of required subjects or academic disciplines. We do believe that there are methods and processes, modes of access to understanding and judgment, that should inform all study" (p. 18).

The concern over the structure of the curriculum is occurring while higher education is experiencing another major transformation: The student population is changing dramatically. Education is no longer a one-time "preparation for life" provided to teenagers before they begin their life's work. Education is a lifelong venture in a society in which a professional education obsolesces in less that a decade and in which workers can expect three or more careers in a working lifetime. Adult, part-time students now account for more than a quarter of the total student population. Continuing education, once the step-child of higher education, has spawned self-standing institutions dedicated to serving adult students. A new kind of education--variously labelled distance education or, more broadly, open learning--has emerged as an international phenomenon over the past decade to redirect the institution to these new students.

What do these changes mean for learning technologies? Ultimately, they may mean new opportunities for the integration of interactive technologies into the mainstream of higher education. The concerns over

curriculum reform and adult students do not exist in a vacuum; they reflect a repositioning of higher education to better serve a society that is still coming to terms with the scale of change that it is experiencing. Learning technologies can play an important dual role in this crucial period. The capabilities of learning technologies are almost perfectly matched to the goals of the curriculum reformers: Problem solving, decision making, development of skills of understanding and judgment. Learning technologies offer a real and tangible means of helping higher education reach these curriculum goals. At the same time, they have the potential of helping to catalyze the change. They have the potential to be both a tool of change and an agent of change.

For that to happen, however, the technology must be seconded to the larger goals of curriculum change and institutional transformation. In the process, learning technologists must broaden their community and, perhaps, learn a new language, for it is apparent that a lot of people are working toward very similar goals, but using different terms to describe them and operating from different sets of assumptions and principles. The new community must bring together the predominating psychological and individual-centered base of the learning technologists with the more philosophical and society/institution-centered base of the general education reform movement and the anthropological/sociological base of adult learning theorists.

Together, these groups comprise a community of interest. The first step is to present the case for learning technologies in this new context and to new audiences.

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